Exploring the Potential of Home Gardening to Increase Food Access and Enhance Community Development in Low-Income Urban Neighborhoods

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Table of Contents

Abstract

Studies show that community gardens increase access to fresh produce and strengthen relationships amongst residents in cities across the United States. Given these contributions to community development, local governments and organizations offer a number of resources to encourage and support those participating in community gardening. While this investment is beneficial, limited research and resources have been directed towards home gardening, an arguably more prevalent and resilient form of food production. My study aims to address this gap in food systems literature by exploring the benefits of home food gardening in urban communities, and the motivations for and barriers to home gardening experienced by those who participate in this activity.

In partnership with a local urban farm, I developed a 10-week home gardening course to help residents of the Linden neighborhood in Columbus establish their own home gardens. The 13 class members, ranging in age and breadth of growing experience, participated in instructional workshops and semi-structured interviews following the conclusion of the course. Grounded theory methodology was used to analyze personal narratives, identifying key themes found across participants' experiences. While access to quality food motivated participation, only one participant experienced increased access to fresh produce. All participants, however, mentioned other benefits, such forming relationships with neighbors and fellow class members, and increasing their knowledge of food production. Home gardening then, like community gardening, seems to be one way of generating different types of community capitals, which could potentially increase the community's capacity to address issues such as food insecurity in the future. In order to spread this beneficial activity, organizations should assist in building up mentors and a support network to re-establish the culture around food production that has been lost to most people in this age of the industrial food system.

Forward

In January 2016, I began working for the Kirwan Institute for the study of Race and Ethnicity, an applied research firm focused on creating more equitable, opportunity-filled communities. My first project as an intern was analyzing survey data from the 2015 St. Stephen's Community House (SSCH) annual community canvass. SSCH is a settlement house located on the East side of Columbus that offers a number of resources to the Linden community.

Assisting with the SSCH canvass introduced me to the residents of Linden and the problems that they see as urgent. Economic and spatial access to healthy food is an issue that is often raised. Due to this need in the community, SSCH addresses food insecurity through its food pantry, while laying the foundation for more sustainable solutions to food access through its urban farm, Project Aquastar. In the summer of 2016, I interned for Aquastar, helping the manager maintain the farm and connect community residents with fresh produce.

The following paper describes my exploration into a set of questions that surfaced as the summer growing season approached. We wondered: what is the potential of home gardening to supplement food access in Linden? Who is growing food in the community now, *or would like to be growing food*, and what challenges do they face? What are the actual benefits realized from home gardening in this community, and how can we better spread and support this activity?

In response to the 291 people in the 2016 canvass who said they would be interested in participating in a home gardening course, the farm manager decided that we would spend the summer providing support to all those interested in creating or expanding their own garden via a home gardening class. The relationships we built over the next few months strengthened the Linden community and gave us a greater understanding of the unique motivations, barriers, and potential benefits surrounding the overlooked activity of home gardening.

Introduction

Despite the many advancements in our industrial agrifood system over the last few decades, 12.7% of households in the US are food insecure (USDA, 2016). Rather than having access to the types and amount of food that are thought to be important for a healthy, balanced life, these approximately 15.8 million people have "limited or uncertain access to adequate food" (USDA, 2016). Food security can be a function of several individual factors, such as employment, housing status, and education (Crowe & Smith, 2012). It is also linked to the food environment, or the "physical presence of food that affects a person's diet," which encompasses retail outlets where food can be obtained, transportation networks that create connectivity, and locations of food production (CDC, 2010).

The term "food desert" is often used in the U.S. to describe areas with limited access to healthy foods (USDA 2009). Typically found in low-income urban neighborhoods, food deserts may have few or no supermarkets, grocery stores, or other food outlets that make healthy diets more accessible. Individuals living in a food desert environment have been shown to eat fewer servings of fruits and vegetables than individuals living in areas with better food access (Blanchrard & Lyson, 2009), and to have higher risk of developing diet-related diseases such as diabetes (Alaimo, Packnett, Miles, & Kruger, 2008).

Because economic and spatial access to healthy foods are problems felt disproportionately by low-income communities (Walker, Keane, & Burke, 2010) (USDA, 2016), it is clear that issues related to food are linked to broader issues of justice and systemic racism. Indeed, these issues were born in part by a history of redlining and white flight during the mid-20th century, which led to patterns of urban disinvestment and grocery store relocation to the suburbs (Guthman, 2008). The legacy of this history remains in the cyclical poverty, lack of

investment, and lower life expectancies found in low-income communities of color (Shelby, 2017).

Rise of Alternative Agrifood Movement

The "alternative agrifood movement" (AAM) is a wave of initiatives that has arisen to combat the many problems associated with the industrial food system (Constance, et. Al, 2014). The AAM includes farmers' markets, community-supported agriculture, and other mechanisms of local food production. From 2006 to 2014, the number of farmers' markets doubled (USDA, 2014). Community-supported agriculture has also been on the rise. Both of these models differ intentionally from the conventional food system, seeking to "re-embed food within society in order to enhance its role in providing nourishment and cultural significance" (Clapp, 2012).

Despite the existence of these alternative food models, however, it is clear that much still needs to be done to address racial, spatial, and socio-economic disparities related to food. While studies on race as it relates to the AAM are limited, one study of farmers' markets found that nearly 74% of attendees are white, while only 14% are African American (Payne, 2002). There is also evidence that participation in CSAs is made up of a predominately white population (Carolan, 2016). Moreover, these alternatives, apart from a few exceptions, are typically located in areas of higher income, catering directly to people who may already have access to adequate food supplies (Guthman, 2008).

One alternative food model found in lower-income neighborhoods though, is urban agriculture. Community gardens, in particular, have played an important role in impoverished communities and communities of color (Guitart, Pickering, & Byrne, 2012). In fact, there is an abundance of research communicating the benefits derived from these spaces, including significant food production and strengthened community relationships. These benefits have attracted investments in community gardens by local governments and nonprofits alike, who

recognize the positive impact they can have on neighborhoods struggling with development-related issues.

Home gardening is another form of urban agriculture. However, compared to community gardening, little research has been done to uncover the potential benefits this form of production offers. In fact, as of 2011, a literature search for peer-reviewed articles on urban home gardens only identified five studies (Taylor & Lovell, 2014). This dearth of research means that home gardeners are not offered the same resources and support networks as community gardeners. Due to the extensive history of home gardens in the U.S. and the possibility that home gardens could cover a larger area than community gardens (Taylor & Lovell, 2014), this form of production warrants exploration. Thus, the goal of this study is to better understand the food systems and community development opportunities home gardens offer, particularly in low-income urban neighborhoods. My guiding research questions are as follows:

1. What are the main motivations to garden in low-income urban communities?
2. What are the realized benefits from gardening in these areas?
3. What are the barriers experienced by those involved in home gardening?
4. What factors make home gardening more accessible?

The following literature review gives a brief overview of what we know about community gardens and home gardens in urban communities.

Literature Review

Community Gardening

In the US, much research has been done on community gardens as a tool for food systems development and, more broadly speaking, community development. From 1985-2011, at least 46 studies have been done on community gardens, predominantly in low-income neighborhoods in

industrial cities (Guitart et al., 2012). The location of these studies in urban areas is, in part, due to the desire to grow food locally as a result of growing concerns about food insecurity, quality and cost (Evers, 2011). Conducted by scholars from various disciplines in the social sciences and public health, many of these studies break down findings by the motivations, benefits[1], and challenges of community gardens.

The greatest motivation for participation in community gardens was found to be increased consumption of fresh food (Guitart et al., 2012). Closely related to this motivation is the desire for improved health, cited in one survey of community gardens in New York (Armstrong, 2000). While is it difficult to demonstrate that community gardens improve nutrition, there is evidence that community gardens can increase access to fresh produce, thereby enhancing nutrition of participants. For example, Alaimo et al. (2008) found household participation in community gardening to be linked with increased consumption of fruits and vegetables. Community gardens may also be considered one way to reconnect people with food sources that are more transparent, as our industrial food system is characterized by both the physical distance most food travels and knowledge gaps about the social and environmental effects of production methods (Clapp, 2016). In a study done in Detroit, consumption of fresh produce was found to be associated with positive perceptions of the quality and selection of the produce available, which are oftentimes lacking in low-income neighborhoods (Alaimo et al., 2008).

Another main motivation for participation in community gardens is the increased social cohesion and community development they can provide. For example, participation in

[1] "A motivation is the desire for achieving something while the benefit is actually achieving it" (Guitart, Pickering, & Byrne, 2012).

community gardens can increase pride and positive perceptions of participants' neighborhoods (Alaimo, Reischl, & Allen, 2010). Community gardens are often seen as "social and cultural gathering places than as agricultural production sites" (Saldivar-Tanaka & Kransy, 2004). Participation in these spaces has been found to be associated with higher levels of social capital (Alaimo et al., 2010), which can be defined as "networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 2000). Social capital is generated in community gardens because they create spaces for people to come together to participate in like-minded activities (Glover, 2004). This outcome is significant, as social capital has been found to strengthen a community's ability to overcome challenges, such as the issue of poor food access (Crowe & Smith, 2012).

While community gardens may improve health and social cohesion, there are challenges that may limit their ability to provide lasting benefits to low income urban communities and communities of color. The biggest challenge faced is land tenure (Guitart et al., 2012). Community gardens are typically located on government owned land with leases that last approximately 5 years. Another dilemma is that community gardens often result in higher property values, causing increased pressure to turn land over for development purposes (Armstrong, 2000). Despite these challenges, community gardens remain a common tool used in lower-income communities to strengthen both the food environment and community resiliency through the work of the collective. It is important to know whether or not home gardening can also be used to address urban food issues.

Home Gardening

Home gardens date back to colonial days, making it perhaps the most resilient form of urban agriculture (Schupp & Sharp, 2012). Although they became less prevalent with the rise of food retail, home gardening has played an important role during crises like the World Wars,

when the government called upon households to aid in food production (Cockrall-King, 2012). During WWII, for example, it was reported that between 18-20 million families had "victory gardens" that contributed 40% of the total American vegetable supply (Lawson, 2005). This substantial contribution was made possible by the many USDA support programs and promotional materials that were provided, under the assumption that people in the city no longer knew how to grow food (Cockrall-King, 2012). However, the support network provided to home gardeners waned as WWII ended, and is nowhere near as present today.

Of the few studies that have been done on contemporary home gardening, home gardens have been found to be more prevalent in rural areas than urban areas (Morton, et. al, 2008) (Schupp & Sharp, 2012). This could be due to fact that food production in the U.S. has historically been a rural activity (Lobao & Meyer, 2001), and rural communities today may have greater access to gardening knowledge and support networks that support this activity. Home gardening, after all, is an important part of the urban environment in the Global South, where community networks have formed around exchanging food and production resources like seeds (Taylor & Lovell, 2014). These points seem to show the importance of culture in determining the presence of home gardens. Space also plays a role, as rural lots in the U.S. tend to be larger than urban lots and urban lots are more likely to be rentals that cannot be altered. Once features of individuals' physical residences are controlled for, however, the rural-urban gap in the prevalence of home gardens may close (Schupp & Sharp, 2012).

Home gardens in urban areas are hypothesized to "contribute to food security, community development, cultural reproduction, and resilience at multiple scales; conserve agrobiodiversity; and support urban biodiversity" (Taylor & Lovell, 2014). Many studies done in the Global South have shown that home gardens significantly aid food security and the

reproduction of familial and cultural traditions (Taylor & Lovell, 2014). One of the few studies done in the U.S., researchers in San Jose, CA found participants of a home gardening program perceive cost savings and health benefits from increased access to fresh produce (Gray, Guzman, Glowa, & Drevno, 2014). Participants also noted positive social benefits, like spending time with family and making friends with other community members (Gray et al., 2014).

While home food gardening in urban areas in the U.S. could be expected to offer several positive impacts, the actual impacts for neighborhoods in Columbus, OH are unclear. The purpose of my study is to more closely examine the impacts of a home gardening program in the neighborhood of Linden.

Methods

Setting: The Linden Community

The Greater Linden community, located on the east side of Columbus, is an area rich in racial, ethnic, and socioeconomic diversity. Although it enjoys these and many other assets, this community experiences several hardships which can be traced back to redlining in the 1930s, when most of Linden was given a C or D rating (Shelby, 2017). The subsequent decades saw steady trends of disinvestment and demographic shifts as the community experienced white flight to outer ring suburbs and an influx of African-American migrants who left behind agricultural jobs in Southern states. Since 1980, the total population in Linden has decreased 16%, whereas the overall population in Columbus has grown; the poverty rate and vacancy rates have increased from 19% to 35%, and 7% to 16% respectively; and home ownership has dropped from 67% to 50% (Shelby, 2017).

Parts of Linden are also considered to be food deserts, as they appear on the USDA's Food Desert Locator map. Although there are varying definitions, the USDA website states that a food desert is a low-income area with 20% or more of the population under the federal poverty line where residents have poor access to a full-service grocery store (USDA, 2016). It is true that surrounding communities have an ample number of large grocery stores and supermarkets, Linden has few options for purchasing healthy foods. The effects of poverty, of which a poor diet is one, can be seen in drastic health disparities between Linden and the county as a whole: in this community, a newborn baby is three times as likely to die in infancy compared to other neighborhoods in Franklin County, and the average life expectancy is about seven years shorter than the county average (CelebrateOne, 2016). Poor nutrition is a risk factor in both of these multi-faceted issues (ASPHN, 2013), (Mari Gallagher, 2007).

St. Stephen's Community House

St. Stephen's Community House (SSCH) is one organization in Linden working to serve the needs of community members. Founded in 1965, the settlement house is a community staple, offering residents a number of resources such as a food pantry, health clinic, daycare, and senior services. Every year, the settlement house conducts a community-wide survey to assess the needs and experiences of Linden residents. The 2016 survey report showed that the pantry is, by far, the most popular service used by St. Stephen's customers, reflecting the significant the role SSCH plays in addressing food insecurity and access issues (2016 Canvass Report).

Through its urban farm, Project Aquastar, SSCH also aims to connect community members with quality food grown on site. This mission involves growing food for distribution in the SSCH pantry and planning a community supported agriculture (CSA) program that Aquastar will launch this coming spring. In addition, the farm director also hopes to inspire and assist

people in adopting agricultural methods at their own homes to increase their access to healthy food.

Summer Gardening Course

Over the summer of 2016, I collaborated with the farm director to create a 10-week home gardening course to help participants establish or expand their own home gardens. We developed this program based on the 291 people who were reported in SSCH's 2016 annual report as having expressed interest in learning how to grow their own food (2016 Canvass Report). After calling all individuals who expressed an interest in the class and provided contact information in SSCH's community survey, we were able to recruit 13 people to participate in the program.

Class members, who ranged in age and breadth of gardening experience, were given material (i.e. raised bed, seeds, soil, etc.) and the option of participating in a number of instructional workshops at the urban farm location. Instructor home visits were also conducted to increase accessibility to gardening instruction as some people in the class had unreliable transportation. All homes were visited three times. Drawing guidance from the document *The Principles for Equitable and Inclusive Civic Engagement* (Holley, 2016), we focused the class on what participants wanted to learn, giving ample space for people to share the knowledge that they already had coming into the program. Class topics included building healthy soil, planning garden layout, and preparing your raised bed for the following year.

The process of developing this course sparked my interest in observing the potential of home gardens to deliver quality food and other benefits in Linden and similar neighborhoods. With the permission of SSCH and the OSU Institutional Review Board and consent from participants, I received approval to study the experiences of the home gardeners taking this summer course.

Data Collection and Analysis

In this study, I use grounded theory methodology (Glaser & Strauss, 1967) to explore the activity of home gardening in Linden. This method offers "systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories from the data themselves" (Charmaz, 2014). As a qualitative method, grounded theory is committed to understanding lived experience (Denzin & Lincoln, 2011). Using a series of coding exercises, the researcher is able to draw themes directly from participants' words, developing hypotheses and key questions that can be further explored in additional studies (Payne, 2017). By observing home food production in Linden and hearing about people's experiences, I aimed to gain a better understanding of home gardening in low-income urban settings to help fill the gap in the literature.

Data for this study consists of three main sources: participant observations, in-depth semi-structured interviews with class members, and a short survey that participants completed during their first week of the class. I collected a set of field notes throughout the summer by attending workshops and home visits, and noting whenever questions were asked, concerns were raised, or ideas were suggested for class activities. Progress photos of people's home gardens were also taken to enrich these written observations. The survey completed by participants (found in Appendix A) was distributed by the course instructor for the purpose of the class, and was therefore used as secondary data.

Interviews

During the last workshop at the beginning of October, class participants were asked to participate in in-depth semi-structured interviews (Given, 2017) at a time and location

convenient to them. The interviews included a series of structured questions (included in Appendix B), along with additional questions prompted by the flow of the conversation (Bernard, 2011). The narratives derived from these interviews constitute the richest portion of my data. Interviews ranged from 30 to 90 minutes and were collected in November and December. A total of 11 interviews were conducted, with two class participants choosing not to participate. Audio recordings were taken during each one with the permission of the interviewee, and later transcribed for analysis.

Data Analysis

The analytical process began with an initial, or "open," coding phase, during which line-by-line codes were applied to the data. This phase allows the researcher to "hear voice" and remain receptive to new experiences, rather than jumping directly to the categorization of data into themes (Payne, 2017). Gerund codes were applied to each line to draw out participants' actions and understand processes at play (Charmaz, 2014). Next, I began axial coding, a more intensive phase in which categories begin to form as initial codes are grouped under collective headings; this is when concepts truly begin to form from the data (Payne, 2017). After organizing my emerging themes into a codebook (Bernard, 2011), I began applying codes to my transcripts using NVivo software. I wrote memos, pieces of free writing, throughout the entire process to reflect and expand upon thoughts that the data sparked (Charmaz, 2014). After an iterative process re-grouping the data and seeing my codebook evolve, I categorized data into themes and subthemes.

Findings

For the sake of this paper, I will communicate my findings in four main categories: Motivations, Realized Benefits, Barriers, and Facilitators. The latter category, consisting of five intertwining subthemes, is one that I believe offers some of the greatest insight into the factors that make gardening more accessible. In each category, I list themes based on the frequency with which they are mentioned in the data. The numbers listed by each title represents the number of participants in the total interview sample who mentioned factors related to the particular theme.

Before listing my findings, it is worth noting descriptive data of participants. Out of the eleven people interviewed, nine were female and two were male. Eight out of eleven participants were over the age of fifty, while three were younger than forty. All participants were African-American. In the class survey, four identified themselves as gardeners with some experience and seven described themselves as beginners. All participants stated that they would prefer to have a home garden, rather than a plot in a community garden close by. While participants' outcomes and participation in the class varied, everyone shared plans to continue gardening next year.

<u>Motivations to Home Garden</u>

1. ***Access to Fresh Produce (9/11)***

The greatest motivation for home gardening expressed by participants was increased access to fresh produce. Characteristics such as better taste, affordability, proximity, selection, and safety were named as being associated with food grown at home. It is interesting to note that all of the inexperienced gardeners stated this as their main motivation, while three of the experienced gardeners listed other primary motivations. All participants noted that quality produce was generally not available in Linden and that this is an inconvenience. It is clear from the emergence of this theme that home gardening is perceived as one way to ease this inconvenience, but most noted that they are able to procure quality produce from outside of Linden.

"If people want fresh they have to go at least 5 to 10 miles away from home to get it, and it should be more accessible than that."

"It would be nice to grow your own and you can just walk outside and pick something and c'mon back in and peel it and eat it"

2. ***Community Benefits (7/11)***

The next most popular motivation was related to community development. Multiple participants stated the desire to share produce with their neighbors; one woman said she feels compelled by her faith to give what she can to those in need. In sharing produce and gardening resources with neighbors, a few participants mentioned the desire to recreate the sense of community that they used to have with old neighbors. Gardening is perceived as a way to spend time with others in Linden, "without drama," and a way to inspire others to take care of their own yards.

"I'm used to having [a community around gardening] and it's not here now, so it would be nice if things could go back to that. I think that would be a good thing."

3. ***Productive Pastime (7/11)***

Many participants are drawn to gardening because they see it as a productive way to spend their time. Five participants, all of them over fifty and retired, said that gardening for them is something to do. All of them, even the beginner gardeners, used the word "hobby" to describe why they are drawn to this activity. Two other participants, both under age forty, said that gardening is a productive way to spend time with their kids and grandkids. Both said that Linden is lacking in programming and safe places for children, so being able to garden at home gives youth an alternative outlet. Unproductive activities such as watching TV were given as contrasting examples of ways that kids in Linden spend their time.

"Havin' a grandson, it gives something for me and him to do together—something productive, that you can actually see it and watch over time...it's hard to even take him to the park…and I don't know about too many programs."

4. ***Education (7/11)***

Many participants said they are motivated to garden because they want to educate their children and grandchildren. One woman mentioned that kids need to participate in activities like gardening because they can learn how taking initiative can result in progress and accomplishment. Gardening is also seen as a way to connect children with their food. Many participants believe that children today think food comes from the store. Therefore, "real life scenarios" like growing food and taking field trips to farms are ways to show children the connection between their food and the broader system within which it is produced. Some participants hoped this exposure would open children up to eating new foods.

> *"Children go to the store and they don't have a clue that cows are milked, so, I mean, I'm for the school system allowing the children to be out more so they can see and use more real life scenarios. It's gonna benefit them in life."*

5. ***Internal Benefits (7/11)***

Internal benefits were also mentioned as motivations to home garden. Six participants stated wanting to test their abilities, in either establishing their first home garden or trying to grow foods that they had never attempted to grow before. Three of the more experienced gardeners talked about "experimenting" with exotic foods. Others said they want to be more self-sufficient, believing that the ability to grow food is one skill that is valuable to have, especially in a food environment like Linden that is not providing adequate access to fresh produce. Gardening, thus, is a way to test and increase personal capabilities which can give individuals a stronger sense of self.

> *"Places like Gahanna or Pickerington…. they get the better quality [produce] first, and then whatever is left at the end is what they give us. So I want my kids not to depend on their food, their low quality of what they want us to have. I want my kids to be able to do it for themselves".*

> *"It was just something that always wondered if I could do."*

6. ***Health (2/11)***

Finally, two participants mentioned better health as motivations to garden. These two older participants see gardening as a way to increase their access to healthy foods, leading to greater consumption of fresh produce, and thus enhanced well-being.

> *"It allows you to eat better for one."*

Realized Benefits from Home Gardening

1. ***Community (9/11)***

People stated that they enjoyed forming relationships over the summer with fellow class members - people who shared like-interests. Some participants began carpooling together, talking outside of the class, and planning to visit each other's gardens. One women's grandson started to volunteer at the SSCH farm. Other participants talked about the interaction with neighbors that their gardens created. In some cases, neighbors showed interest in getting their own raised bed. One participant even had neighbors ask her for plants. Overall, gardening helped participants to feel more optimistic about their communities.

> *"Meeting people with the same interests and listening to them talk about their gardens, how it succeeded…especially the three sisters. I would love to see their gardens; Next time I see them, I'm gonna ask can I come over and see their garden"*

> *"A group of my neighbors came by, and they said. "You are always working in your garden; your yard always looks good .... " and he said "and can I have some of those plants?" And I'm thinking, I get that question all of the time. "Can I have some of your plants?"… And I give away my plants all the time."*

2. ***Enjoyable Pastime (9/11)***

Almost all participants said they enjoyed simply watching their plants grow this summer. Many described the anticipation or excitement that they felt as they began to see their seeds come up. One mother said that seeing her children excited about the garden made her even more invested in the activity. About half of participants said that gardening is their hobby. This group includes beginner gardeners who, after their first summer gardening, feel like gardening is now part of their identities. The most experienced gardener talked about how he enjoyed growing

watermelon for the first time this summer, and how he is excited to plant the seeds he saved next year. Many participants talked about how bonding with family members also made gardening enjoyable.

> *"It was just making me get up and do something. Like this is my hobby. I was looking forward to it every morning, going out there looking at my garden and watching it grow."*

3. ***Education (8/11)***

Many participants appreciated the educational opportunities that their gardens provided this summer. Four people, all beginning gardeners, talked about the lessons they learned through making mistakes in their gardens, such as watering too much or not spacing plants far enough apart. All of them used the phrase "now I know" in their interviews, saying that they feel prepared to do it right next season. Others talked about the value that this activity had in teaching their kids. One woman used gardening as a way to enrich her daughter's school experience, choosing to send her to environmental summer camp as well. Another woman talked about the skills that her children learned through gardening.

> *"I think what we experienced this summer that will go hand in hand with [my daughter] in science, in her school. This is a project for her. So, you know, just trying to let her know, this is still school. This is some of the stuff you're talking about in your books, online, through the movies you watch, but you're actually doing and participating in this stuff."*

> *"I love it because it teaches my children how to work together. My daughter loved to pick. My son really liked the kinda pulling of weeds. He actually got really good at it and got a job at Columbus state in their horticulture program."*

4. ***Internal Benefits (4/11)***

In addition to providing an enjoyable pastime, growing food gave many participants a sense of pride. The act of gardening can be seen as an act of creating, which makes people feel as if they have accomplished something. One participate likened gardening to Divine creation, saying that this activity provides her with a spiritual connection. Youth family members of gardeners also

gained internal benefits this summer. One participant's grandson began telling people about "[his] garden," showing the pride and ownership he felt.

> *"There's something about growing something that gives you the feelin' of accomplishment. I don't care if this tomato is this little… it's like "I grew this. I did.""*

5. ***Health (2/11)***

Two participants talked about perceived physical and mental health benefits from their gardens. These came about not from increased consumption of produce, but from the relaxation and physical exercise gardening provided.

> *"It was very relaxing. Just doing all of the yard work that I did; the activity was invigorating and relaxing."*

6. ***Food (1/11)***

Finally, while food was the most popular motivation to garden, it was the least realized benefit. Almost all participants experienced difficulties that led them to not eat much or anything at all from their gardens. The one participant who did grow food to eat, however, was one of the more experienced gardeners. She said she grew enough to contribute to about twenty meals and that the quality of the food was "amazing." The most experienced gardener in the group harvested only "a salad's worth" during the entire 10-week class session. He said his yield varies from year to year, and that gardening is not a reliable way to provide food for your household. All other participants were somewhat discouraged by not producing food, however they all said they are excited to try again next year.

> *"l love arugula, so I grew a bunch of arugula... I had a lot of that. I had a lot of the mesclun mix. I had turnip greens and the turnips. I did radishes and the carrots. The broccoli didn't do too well, but I think its 'cause it was too late. I mean it grew, but then it kind of bolted. What else ... carrots, radishes, turnips. I love turnips, I had a lot of turnips…"*

> *"If I was feedin' my family we'd be starving."*

<u>Barriers to Establishing and Maintaining Home Gardens</u>

1. ***Pests (8/11)***

The greatest barrier experienced by participants this summer was interference from pests. Four people said that they experienced animal pests, such as groundhogs and raccoons. One woman said that she has to worry about her own dog getting into the garden. Another participant said he experienced problems with bugs this year, saying caterpillars were killing his kale. Finally, although no one confirmed these disturbances, a few people mentioned worrying about kids getting into their gardens and causing destruction.

> *"Our biggest problem here is keeping animals away from the garden. I decided I'm gonna put a tarp on it this winter, and then I'ma build a chicken-wire fence around it, like that...build it up high so nothing gets in there."*

2. ***Physical Environment (7/11)***

The second most common type of barrier experienced were issues related to the physical environment. Three participants, two of them experienced gardeners, said that the Columbus soil is not good quality, which makes growing food difficult. Three other participants, all of whom used to live in rural communities, said that they do not have enough space to garden as much as they want. One woman said that there is not enough room to rotate crops, like she would prefer. Four participants also mentioned that renting their homes inhibits them from altering their properties as much as they would like.

> *"We're renting so we can't just undig our whole yard…and then back to the soil. If you have crappy soil you're gonna get crappy return."*

3. ***Resources (6/11)***

Access to the necessary information and material resources was also an issue for participants, despite the class model providing certain resources. Four participants stated the need to learn more to feel confident in gardening. Others listed a lack of tools and the added expense of seeds and good soil as barriers that have kept them from gardening as much as desired in the past.

> *"My biggest barrier is my tiller; It broke. And buying the dirt. I used to have a young man, he worked on a horse farm, and he would bring me a big pile of manure every year.*

I've lost contact with him. And praise God I ran into you and was able to get some this year. It has been a challenge. Just tools."

4. ***Intangible Investment (5/11)***

Investments of time was a barrier to gardening that five people mentioned. Many of these participants are civically engaged in other ways, or are busy with jobs, which sometimes makes spending time on gardening difficult. A few people said that being older allows them more time to spend on this activity. Having a home garden also requires a great deal of labor and maintenance. For beginner gardeners, the perception of the labor needed to establish their own garden was so daunting that it kept them from attempting to garden in the past.

> *"I was kinda hesitant to try and do a garden because I knew that it took a lot of work, and I was trying to figure out, "well how am I gonna fit this in with everything else I do?" But, I thought it was really cool, because once you get into it, it's just one of those things that you just want to keep doing it."*

5. ***Physical Restrictions (3/11)***

The final challenge mentioned was physical restrictions that make gardening difficult. As most of the class participants were older, multiple people said that they had trouble bending over and working at the ground-level. This barrier also keeps people from visiting other places where they might be able to access resources, like SSCH. Without transportation, this issue makes gardening a difficult activity to do alone.

> *"I would be up there more, but my leg… I used to walk all the time. I walked from here to SS two or three times a day, but I'm getting older."*

> *"I'm not good with the bending and stooping anymore."*

<u>Facilitators that Make Home Gardening More Accessible</u>

1. ***Previous Exposure (11/11)***

While many class participants had never had a home garden previous to this class, all noted previous garden experiences with family or neighbors. For nine out of eleven participants, this exposure happened during their youth with family members who had gardens or even farms. For

two participants, this exposure occurred through interacting with an influential neighbor who gardened. One woman had this experience as a child, while another was introduced to gardening as an adult by an older neighbor. Many participants described vivid memories of loved ones' gardens and the home-grown food they were able to help harvest and eat. It seemed that all of these experiences included some sort of mentor and proximal access to a garden. In all cases, it seemed that participants were attracted to the summer gardening class because they were already aware of the potential benefits of gardening, due to these past experiences.

> *"We had a huge garden in the back yard, so we were used to having to go out and pull the weeds and pick the green beans when they were done and pluck the com when it was done."*

2. ***Social Network (11/11)***

In addition to having mentors that have introduced them to gardening, participants recalled how in their old communities, gardening was a normal activity that everyone participated in. Two participants who used to live on farms said "that's just the way it was." Another participant contrasted Linden with his community in Warren, Ohio where growing food was the norm because there were many farms and farmers. He even contrasted the city of Columbus with Cleveland, saying that the latter offers a stronger support network for gardening. All of these points support the idea that gardening is a cultural activity that is easier to participate in when it is embraced by the broader community. Participants seemed to appreciate the support network provided by the class because it had previously been missing from their experiences in Linden. The class provided members with exposure to people who shared the same interest, mentors who could answer questions, and materials to establish or expand their own gardens. In a community that is spatially and temporally removed from food production, the class platform was a way to connect people interested in home gardening with a social network that offered them support. Many people noted the convenience of SSCH being close by their homes, while others with transportation issues wished their was another resource hub closer to home.

"Well, our neighbors, most everybody around there grew food. Because we wasn't close like this… and the stores wasn't that close that you could go everyday. So you didn't have no choice."

"In Warren, I would love gardening. Because we were in a more rural area…with farms, farmers…"

"It's nice to have people who say "you can come get some things" …you don't have that."

3. ***Encouragement (9/11)***

Many participants said that encouragement makes gardening easier. The two participants who were introduced to gardening through their neighbors talked about how their neighbors encouraged them to come over often to participate and learn. Others recalled family members involving them in the garden as children. Participants said this encouragement gave them the opportunity to experience the joys of gardening, like "how good a home-grown tomato tastes." In order for gardening to spread in Linden, participants believe people need to be encouraged to take advantage of opportunities where they too will be able to see how they can benefit. One participant believes that face-to-face communication is the most effective in offering this invitation to try gardening. For many people, the class was an opportunity to engage and see that gardening is something they can do at their own homes. In many ways, the invitation to participate in the class was like an old neighbor inviting participants next-door to garden.

"My neighbor that lived two doors down from me. She had a garden in the back, cause this is the back of our house. She had a garden out there… just about everyday would ask me to come over and watch her or help her or whatever."

"Maybe we need like a person in the linden area, like maybe one on every block, or two, that has some ... some enthusiasm to maybe encourage other people on the block. That might work."

4. ***Observation (7/11)***

Over half of participants said that being able to observe other people's gardens helps and inspires them to work on their own. Many said it was very beneficial to go to the SSCH urban farm to see the different methods used. In fact, multiple people used ideas they saw at the farm in their own gardens, such as sprinkling coffee grounds over their raised beds. One woman even wants to attempt a small aquaponics operation after seeing the one at SSCH. After visiting the urban farm

and seeing all of the crops flourishing, she thought, "Okay; it can happen!" Other participants talked about community gardens and neighbors' yards that have inspired them in the past.

> *"When he was giving us advice, since we were going on the tour of what he did [at SSCH] and what you guys were doing in this part, and how this can grow with that, and how this keeps the bugs. That was stuff that I didn't know. I think it was helpful in seeing someone's garden flourishing, first off."*

5. ***Modifications (6/11)***

Garden modifications seemed to help make gardening more accessible for several participants this summer. For two of the women who rent their homes, they were able to garden using large containers. While this is not the most ideal situation, it did allow them to engage in this activity and have positive experiences. One woman mentioned that the pot helped her in that she did not have to bend over all the way and hurt her bad knee. For two other older participants, elevated raised beds were made to help with physical restrictions. They enjoyed having the raised bed off the ground, and noted that this helped with pests as well. Finally, two participants said that the raised bed procured in the class helped them because the soil was of better quality than the Columbus soil.

> *"My dog is my biggest barrier. It's just trying to figure out how to do it. So the raised bed for me, that was the solution."*

> *"The raised beds I think are easier for some reason, easier than my regular garden. My regular garden has a lot of rocks…this is a rocky area for some reason, and I spend a lot of time still taking rocks out. The raised beds were so much easier. Everything cruised so much faster. I loved it."*

Discussion

Research Implications

While the original impetus for the summer gardening class was the desire to address food desert areas in Linden, it seems that home gardening is not an effective method—at least initially—for increasing access to fresh produce in the community. A number of barriers held participants back from growing food to eat, even the gardener with the most experience. As Schupp and Sharp suggest, it seems that gardening, while a viable way to grow food, is more

likely to occur as a successful self-provisioning strategy in communities where there is a pre-existing culture and social network around growing food (2012). While the lack of food produced was discouraging for participants, it seems that the program was still able to make gardening more accessible and has the potential to expand as more residents are exposed to the activity. Due to the overlap between the experience that the class provided and the production-oriented communities many participants used to be a part of, it seems that this class was the first step in creating such a culture and social network around growing food in Linden.

Community Capitals Framework

Although food production was lagging, the activity of home gardening provided many other benefits to participants including relationships, education, pride, and an enjoyable pastime. Evidence of the creation of social capital was provided by participants who talked about forming friendships with other class members, conversing more with neighbors, and feeling more supported by SSCH staff. Social capital, one of seven types of community capitals (Flora & Flora, 2008), entails the "networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 2000). Because these relationships led to increased access to information and a potential for future sharing of materials and yields, it seems that home gardening is one possible way to generate this type of capital in Linden.

Evidence of the creation of cultural and human capital can also be seen in the findings. Cultural capital refers to "legacy" and can encompass customs and beliefs (Bourdieu, 1986). The fact that food production is a piece of most participants' familial history and that many want to pass this "lost knowledge" on to youth shows that home gardening can be a tool for cultural reproduction. Human capital refers to personal assets such as education and skills (Flora & Flora, 2008). Because gardening was seen as a tool for self-sufficiency and personal development, as

well as a way to teach youth about the food system, it seems that this activity also has the potential to create human capital.

Given the positive community development impacts that increased levels of community capitals can yield (Flora & Flora, 2008), home gardens could be studied under the lens of the community capitals framework. As Crowe & Smith suggested, it may be that communities with high levels of social, cultural, and human capital are more able to address issues like food insecurity than communities with low levels of these capitals (2012). Future work on home gardens could look at the following hypotheses:

1. Home gardening is one way to increase community capitals, which may make communities more able to address certain issues like poor food access.

2. Communities with a higher number of home gardeners are more likely to have other alternative agrifood movement initiatives.

Diffusion of Innovations Framework

It also seems that diffusion of innovations research is very applicable to the topic of home gardening. Diffusion of innovations is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). According to Rogers, the rate at which an innovation is adopted depends on people's perceptions of five innovation characteristics: relative advantage, compatibility, complexity, trialability, and observability (2003). We see each of these characteristics in the facilitators theme. Through exposure, people become aware of the advantages gardening offers. By experiencing this activity with family members, neighbors, and in the class setting, participants have been able to trial this activity with low risk of incurring significant losses. Access to a social network that supports food production decreases the complexity of the activity and offers opportunities to observe different methods.

In order to better spread an innovation, barriers must be decreased and facilitators must be enhanced (Rogers, 2003). One facilitator in this field is communicating the innovation to potential adopters. Interpersonal communication is considered one of the most effective ways to get messages from one person to another (Rogers, 2003). We saw this at work within the class, with the one-on-one conversations created and the emergence of "encouragement" as a main facilitator theme. Diffusion is even more effective when "opinion leaders," individuals with influence within the community who act as role models, are able to communicate innovations to others (Valente & Davis, 1999). Due to the greatest demographic of participants in the class being older African-American women, as well as the knowledge that participants believe other older African-American folks in the community have, it appears this would be the key opinion leadership group within the community. This is significant, as opinion leaders are not typically elderly or members of minority populations (Rogers, 1995). Nevertheless, raising the capacity of older Black folks with this wisdom seems like it could be an effective way to spread gardening throughout Linden.

One critique of traditional diffusion of innovations work, however, is it ignores social-structural constraints of marketing and infrastructure dependences that can retard or even prevent widespread adoption (Brown, 1981). We see this within the class model, as not everyone in the Linden community was reached during the promotion phase. In addition, some participants had a more difficult time getting to SSCH to the urban farm workshops, which means that this learning model is somewhat "infrastructure-constrained" (Brown, 1981). By supporting individuals who are interested in gardening at their homes, especially those who are motivated by the possibility of sharing with and educating others, a network of smaller gardening "resource hubs" could be spread across the community. Rather than relying on community gardens alone, programs like

the summer class can help create a community *around* gardening that increases opportunities for individuals to be exposed to gardening.

Given these overlaps with this theory, future research on home gardening could adopt a diffusion of innovations framework. These are potential hypotheses that could guide work:

1. When it comes to home gardening in urban areas, older African-American people, especially women, are likely to be "opinion leaders" because they have gardening knowledge are civically engaged within the community.
2. Increasing the capacity of these "opinion leaders" will be more effective in spreading gardening than trying to increase the capacity of people who have never been exposed to gardening.
3. Providing material and informational support to benefit home gardens can help overcome the infrastructure-constrained nature of gardening education models that are based at community gardens and urban farms.

Practical Implications

Since home gardens seem to be a beneficial activity in Linden, SSCH could continue offering resources and support to those interested in participating in this activity. As more research is gathered on home gardens, the local government and additional nonprofits could choose to begin investing in individual gardens, just as they do community gardens. Viable ways to help create a community *around* gardening include the following ideas:

1. Volunteer days to help community members establish home gardens
2. Offer access to materials and tools through neighborhoods resource hubs, like SSCH
    a. Give out plant starters, seeds, etc. through the pantries and food production sites
    b. Help with modifications to make gardening more compatible with people's' needs
3. Raise up mentors within the community who can spread gardening
    a. Create senior mentorship programs, where experienced gardeners are given supplies to share with neighbors
    b. Offer training programs to gardeners interested in teaching others
4. Create platforms for community members to come together and build relationships
    a. Hold events like "seed swaps" (this was mentioned by class participants)
    b. Bring Extension to communities to do home gardening workshops
    c. Create symbiotic partnerships between schools and neighborhood

While most of these ideas require funding of some sort, potential opportunities for support may exist in partnering with The Ohio State University, Local Matters, The Franklin County Local Food Council, The Mayor's Green Team, Franklin Conservatory, and the Greater Columbus Growing Coalition.

Conclusion

In conclusion, my project was created to increase community members' capacity to grow food at home, as well as to help address the gap in the literature on home food gardens. While the class had varying levels of participation and mixed outcomes in terms of production, my thesis project sheds light on some of the many motivations, benefits, and barriers related to home gardening in Linden. My findings also suggest a number of gardening facilitators that could be the focus of future studies on home food gardens in urban environments. Finally, this project shows the important role that organizations like SSCH can play in helping diffuse and support this activity in the absence of a dominant food production culture.

While my findings give valuable insight into home gardening in this community, many limitations exist within this study. The first is that these insights are gathered from only eleven people participating in one program. The second is that due to the qualitative nature of my work, all findings are based on people's perceptions; I was unable to conduct any thorough analyses to measure the validity of responses. Another limitation of this study is the late start time that the class had. Initially it was supposed to commence in late spring, but due to limited capacity, the class commenced mid-summer. Food production would have likely been greater had the class gotten an earlier start. Finally, it is possible that the social benefits participants experienced this summer would not have been as great without the class gatherings; therefore my findings may overstate this as a benefit of the activity of home gardening alone.

Despite the limitations of my study, I do believe that these outcomes show that home gardening can be a way for individuals and networks to develop in Linden. Organizations like SSCH hold a special role in that they can aid this development through the provision of information, material resources, and by linking community members together through programs like the summer gardening class.

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Appendix A: Class Survey

Garden Experience:

1. Before this summer, have you ever planted a home food garden?
    a. Yes
    b. No

2. Please list how much gardening experience you have had, prior to this summer:
    a. A few months - 2 years
    b. 3-5 years
    c. 5+ years
    d. No experience
    e. No experience, but my family had a garden when I was young

3. If you have gardened, please list the fruits and/or vegetables you have grown:

    _____

4. Are there any fruits or vegetables that you *would like* to have, but have not grown? (If so, please list them below.)

    _____

5. Why are you interested in gardening? (Circle all that apply)
    a. It is a good hobby
    b. I want to increase my access to fresh produce
    c. I want to meet people in my community
    d. I want to learn how to be more self-sufficient
    e. It is a good way to get outside and exercise
    f. It is relaxing
    g. I want to teach my children how to grow food
    h. I want to know where my food is coming from
    i. Other: _____

6. What barriers to gardening have you experienced?
    (Circle all that apply and rank them, 1 being the greatest barrier)
    a. ____ Lack of time
    b. ____ Lack of gardening knowledge (how to start and/or maintain)
    c. ____ Lack of material resources (soil, tools, etc.)
    d. ____ Lack of space
    e. ____ Other: _____

7. What do you hope to gain from participation in the St. Stephen's gardening class this summer? (Circle all that apply)
    a. More healthy food for my household
    b. Physical exercise
    c. Social interaction (with family and community members)
    d. Cooking knowledge
    e. Gardening knowledge
    f. Material resources
    g. Other: _____

8. What garden setting would you prefer?

a. Home garden
b. A plot in a community garden close to your home

Food Practices:

9. In the last month, on average, how many times did you eat vegetables **per day**?
    a. Never (skip to 12)
    b. 1
    c. 2
    d. 3
    e. 4+

10. Each time you ate vegetables, how much did you usually eat?
    a. About ½ cup
    b. About 1 cup
    c. About 2 cups
    d. More than 2 cups

11. In the last month, on average, how many times did you eat fruit per day?
    a. Never (skip to 14)
    b. 1
    c. 2
    d. 3
    e. 4+

12. Each time you ate fruit, how much did you usually eat?
    a. About ½ cup
    b. About 1 cup
    c. About 2 cups
    d. More than 2 cups

13. Do you believe that you and your family eat enough fruits and vegetables?
    a. Yes
    b. No

14. If your answer was 'no,' what is keeping you from eating more produce?
    a. Good quality produce is expensive
    b. My community does not have access to grocery stores with quality produce
    c. I often do not know how to prepare fresh produce in a way that tastes good
    d. Other: _____

Please rate your agreement with the following statements:

15. **Gardening is a good way to increase consumption of fresh produce.**

Strongly Disagree										Strongly Agree
0	1	2	3	4	5	6	7	8	9	10

16. **Learning how to cook / prepare fresh produce helps me to eat more of it.**

Strongly Disagree										Strongly Agree
0	1	2	3	4	5	6	7	8	9	10

Appendix B: Interview Questions

I. Motivation
   a. When did you first garden?
   b. What drew you to this activity?
      i. Did your family garden when you were growing up?
      ii. Do you come from a neighborhood or culture that reinforces growing your own food?
   c. What did you hope to gain in gardening yourself?
   d. Is gardening in any way a response to the food that is available to you in Linden?

II. Barriers
   a. What makes gardening difficult?
   b. What has held you back from growing the type / amount of food you want?

III. Class Experience
   a. Why did you decide to take the class?
   b. What did you like about your experience? Was it helpful?
   c. What barriers did the class not address?
   d. Would you have attempted to grow food this summer without the class?
   e. Did you enjoy visiting SSCH?
   f. How did you feel watching your plants grow this summer?

IV. Benefits
   a. Has your garden this summer increased your access to and consumption of fresh produce?
   b. Did you notice any other benefits from gardening?

V. Potential of Spreading Gardening in Linden
   a. Do you think this activity could spread to your neighbors?
   b. Do you think it would be beneficial for others to grow food in Linden?